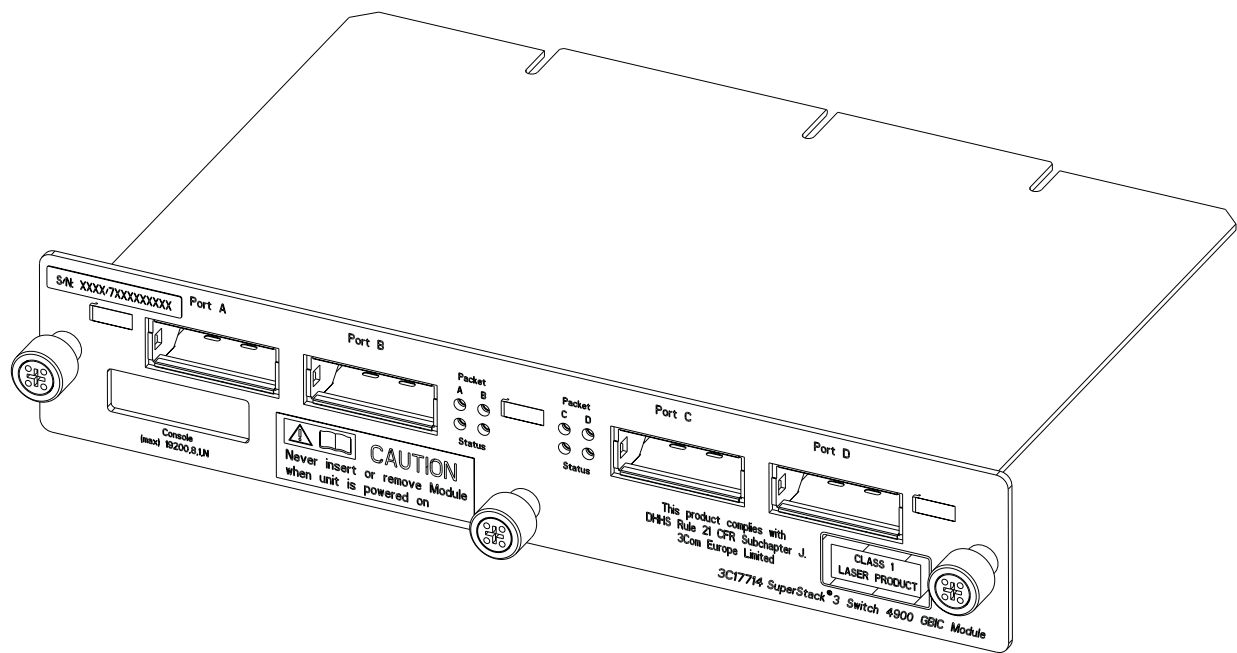# SuperStack® 3 Switch 4900 Series GBIC Module (3C17714) User Guide

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3com™

INTRODUCTION

The GBIC Module (3C17714) provides your SuperStack® 3 Switch 4900 Series with four Gigabit Interface Convertor (GBIC) expansion ports. The Module supports fiber Gigabit Ethernet short-wave (SX), long-wave (LX) and long-haul (LH70) GBIC transceivers in any combination. This offers you the flexibility of using GBIC transceivers to provide connectivity between the Switch and remote 1000 Mbps workgroups or to create a high capacity aggregated link backbone connection. The Module conforms to the full duplex implementation of the Gigabit Ethernet standard, IEEE 802.3x.

ℹ️ *The Module requires management software version 1.3 or later to be installed on the Switch. This is supplied on the CD-ROM that accompanies the Module. For instructions on upgrading management software, refer to the documentation supplied with your Switch.*

LEDs

You can gather information about the status of the Module and its packet activity using the Expansion Module LEDs on the front of the Switch and the Port LEDs on the front of the Module.

Expansion Module Activity LED (Switch)

Status	Color	Meaning
On	Amber	Packets are being transmitted or received on the Module.
Off	No color	There are no packets being transmitted or received on the Module.

Expansion Module Status LED (Switch)

Status	Color	Meaning
On	Amber	The Module is installed.
Off	No color	The Module is not installed.
Flashing	Amber	The Module is installed but is not recognised (faulty or unsupported).

Port Activity LED (Module)

Status	Color	Meaning
On	Amber	Packets are being transmitted or received on this port.
Off	No color	There are no packets being transmitted or received on this port.

Port Status LED (Module)

Status	Color	Meaning
On	Green	A link is present and the port is enabled.
Off	No color	There is no link present.
Flashing	Green	A link is present and the port is disabled.

INSTALLATION AND REMOVAL

WARNING: *Installation and removal of the Module must be carried out by qualified personnel only. Before installing the Module into a unit, you must first disconnect the unit from the mains power supply. For full safety instructions, refer to the user guide that accompanies the unit.*

AVERTISSEMENT: *Confiez l'installation et la dépose de ce Module à un personnel qualifié. Avant d'installer ce Module dans un groupe, vous devez au préalable débrancher ce groupe de l'alimentation secteur. Pour prendre connaissance des consignes complètes de sécurité, consultez le guide utilisateur qui accompagne ce groupe.*

ACHTUNG: *Die Installation und der Ausbau des Moduls darf nur durch Fachpersonal erfolgen. Vor dem Installieren des Moduls in einem Gerät muß zuerst der Netzstecker des Geräts abgezogen werden. Vollständige Sicherheitsanweisungen sind dem Benutzerhandbuch des Geräts zu entnehmen.*

WARNING: *When the Module is inserted into the switch, the three captive thumbscrews securing the Module must be tightened with a suitable tool. Keep the blanking plate and the fixings in a safe place. If you remove the Module at any time, you must then replace the blanking plate.*

AVERTISSEMENT: *Quand le Module est introduit dans le commutateur, il faut visser les trois vis moletées imperdables, qui bloquent le Module, avec un outil adapté. Conservez la plaque d'obturation et les fixations en lieu sûr. Si vous retirez le Module à tout instant, vous devez alors replacer la plaque d'obturation.*

ACHTUNG: *Beim Einsetzen des Moduls in dem Switch sind die drei unverlierbaren Flügelschrauben mit einem passenden Werkzeug festzuziehen. Die Distanzplatte und die Befestigungselemente an einem sicheren Ort aufbewahren. Beim Austausch des Moduls ist auch die Distanzplatte zu ersetzen.*

WARNING: *You must only insert a 3Com approved GBIC transceiver into the Module. These are listed in the "Approved GBIC Transceivers" section of this User Guide.*

AVERTISSEMENT: *Le module accepte exclusivement des émetteurs-récepteurs GBIC agréés 3Com. La liste de ces types d'émetteur-récepteur figure à la section "Emetteurs-récepteurs GBIC agréés" du présent guide d'utilisateur.*

ACHTUNG: *Setzen Sie nur von 3Com genehmigte GBIC-Empfänger in das Modul ein. Eine Liste solcher Empfänger finden Sie in dieser Bedienungsanleitung in dem Abschnitt 'Genehmigte GBIC-Empfänger'.*

WARNING: *Fiber Optic ports - Optical Safety*

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CLASS I
LASER DEVICE
```

Never look at the transmit laser while it is powered-up. Never look directly at the fiber TX port and fiber cable ends when they are powered-up.

WARNING: *Use of controls or adjustments of performance or procedures other than those specified herein may result in hazardous laser emissions.*

AVERTISSEMENT: *Ports pour fibres optiques – sécurité sur le plan optique*

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DISPOSITIF LASER
DE CLASSE I
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Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

AVERTISSEMENT: *L'utilisation de contrôles, de réglages de performances ou de procédures autres que ceux qui sont spécifiés au sein du présent document risquent d'entraîner l'exposition à des rayonnements laser dangereux.*

ACHTUNG: *Faseroptikanschlüsse – Optische Sicherheit*

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LASERGERÄT
DER KLASSE I
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Niemals ein Übertragungslaser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.

ACHTUNG: *Die Verwendung von Steuerelementen oder die Anpassung von Leistungen und Verfahren in anderer als der hierin genannten Weise kann zu gefährlichen Laseremissionen führen.*

INSTALLATION AND REMOVAL

Handling the Module

The Module can be easily damaged by electrostatic discharge. To prevent damage, observe the following:

- Always wear an anti-static wristband connected to a suitable earth point.
- Do not remove the Module from its packaging until you are ready to install it into a Switch.
- Do not touch any of the pins, connections or components on the Module.
- Handle the Module only by its edges and front panel.
- Always store or transport the Module in anti-static packaging.

Installing the Module into a Switch

⚠ **CAUTION:** *This Module is not hot-insertable or hot-swappable. Always make sure that the Switch is powered down and disconnected from the mains before installing or removing a Module. Use the following instructions when installing or removing a Module.*

⚠ **CAUTION:** *This Module is only designed to work with the 3Com SuperStack 3 Switch 4900 Series.*

To install the Module:

1 Ensure that the Switch is disconnected from the mains power supply and RPS connector (if applicable) and that you are wearing an anti-static wristband connected to a suitable earth point.

2 Undo the three screws securing the blanking plate at the rear of the Switch using a suitable screwdriver. Do not remove any other screws from the rear of the Switch.

3 Remove the blanking plate.

4 Keep the blanking plate and screws in a safe place. If you remove the Module at any time, you must replace the blanking plate to prevent dust and debris entering the Switch and to help the circulation of cooling air.

5 Hold the Module so that the text on the front panel is upright. Insert it into the Switch, pushing firmly to ensure the Module is seated correctly so that the backpanel is flush with the back of the Switch. Tighten the three captive thumbscrews securing the Module with a suitable tool.

Activating the Module

1 Ensure that the Switch is powered-up.

2 Insert one of the following transceivers into a GBIC expansion port on the Module:

- **1000BASE-SX GBIC transceiver**

  Use this transceiver to connect the Module directly to multimode fiber-optic cable.

- **1000BASE-LX GBIC transceiver**

  Use this transceiver to connect the Module directly to a single-mode fiber-optic cable or to multimode fiber using a conditioned launch cable.

- **1000BASE-LH70 GBIC transceiver**

  Use this transceiver to connect the Module directly to a single-mode fiber-optic cable or to multimode fiber using a conditioned launch cable.

ⓘ *To ensure optimal performance, compatibility, and regulatory compliance, use only GBIC transceivers that 3Com supports. See "Approved GBIC Transceivers" on page 4.*

  a Orient the transceiver so that the fiber-optic duplex subscriber connector (SC) is toward you.

  b Gently slide the transceiver into the GBIC port until it clicks into place.

⚠ **CAUTION:** *GBIC transceivers are keyed and can be properly inserted only one way. If the transceiver does not click when you insert it, remove it, turn it over, and reinsert it.*

ⓘ *GBIC transceivers are hot-insertable and hot-swappable. You can remove them from and insert them into any port on the Module without having to power down the Switch.*

3 The transceiver connects to the network using the duplex SC connector. Attach the male duplex SC connector on the network cable into the duplex SC connector on the transceiver.

4 Connect the other end of the fiber-optic cable to a device fitted with an appropriate Gigabit Ethernet connection.

5 Check the LEDs on the front of the Switch and the rear of the Module to ensure that the Module is operating correctly. Refer to *"LEDs"* on *page 1* for more information.

Removing a Transceiver from the Module

To replace an existing GBIC transceiver, compress the side tabs and gently pull the transceiver out of the port.

ⓘ *GBIC transceivers are hot-insertable and hot-swappable. You can remove them from and insert them into any port on the Module without having to power down the Switch.*

Removing the Module from a Switch

1 Ensure that the power supply and the backbone connection cables are disconnected from the Switch.

2 Undo the three captive thumbscrews securing the Module into the Switch using a suitable tool. Do not remove any other screws from the Switch.

3 Remove the Module.

4 If you are not fitting another Module immediately, replace the blanking plate to ensure that dust and debris do not enter the Switch and to help the circulation of cooling air.

MANAGING THE MODULE

When the Module is installed you can configure it through your Switch. Refer to the "SuperStack 3 Switch Implementation Guide" and the "Management Interface Reference Guide" supplied with your Switch for more information.

Troubleshooting GBIC Transceivers

After you insert the GBIC transceiver into the port, the Switch management software verifies the transceiver operation. If the transceiver is not working properly, the software displays one of the following error messages:

- **Invalid GBIC fitted**

  The GBIC transceiver is invalid and will not be recognised by the Module.

  To be recognised as valid, the GBIC transceiver must have the following characteristics:

  - 1000BASE-SX, 1000BASE-LX or 1000BASE-LH70 media type
  - Fiber SC connector
  - Type 4 GBIC with internal EEPROM fitted

- **Faulty GBIC fitted**

  The GBIC transceiver is faulty and will not operate within the Module.

To correct these problems, completely remove the transceiver and then reinsert it. If the problem persists, contact 3Com Technical Support.

Device Mimic States

The Web interface management software on the Switch displays the Device Mimic, which is an interactive representation of the currently selected unit. The following states are displayed for the GBIC Module when it is installed:

GBIC Module - Device Mimic States

Status	Meaning
	FiberSC GBIC fitted, link up, enabled.
	FiberSC GBIC fitted, link up, disabled.
	FiberSC GBIC fitted, link down, enabled.
	FiberSC GBIC fitted, link down, disabled (a receiver fault may have occurred).
	Empty GBIC port, port enabled.
	Empty GBIC port, port disabled.
	Invalid GBIC fitted (an internal EEPROM fault may have occurred).
	Faulty GBIC fitted (a transmitter fault may have occurred).

MODULE RESTRICTIONS

When using the GBIC Module, note the following:

- The ports only operate at 1000 Mbps.
- The ports only operate in full duplex mode.
- The Module is not hot-insertable.
- The Module is not hot-swappable (note that GBIC transceivers *are* hot-swappable).

APPROVED GBIC TRANSCEIVERS

The 3Com approved GBIC transceivers are:

- 3CGBIC91 GBIC (SX)
- 3CGBIC92 GBIC (LX)
- 3CGBIC97 GBIC (LH70)

To access the latest list of approved GBIC transceivers for the Module on the 3Com Corporation World Wide Web site, enter this URL into your Internet browser:

`http://www.3com.com/en_US/products/gbics.html`

PROBLEM SOLVING

If you suspect a problem, carry out these steps *before* contacting your supplier:

- Ensure that the Module is correctly installed in the Switch and that the three captive thumbscrews which secure the Module are tightened with a suitable tool.

- Ensure that the Switch in which the Module is fitted is powered-up.

- Ensure that the device at the far end of the link is powered-up and operating correctly.

- Ensure that all connectors on the fiber optic segment are correctly engaged.

- Clean the terminators by wiping them gently with a clean tissue or cotton bud moistened with a little ethanol. Dirty fiber terminators on the fiber optic segment impair the quality of the light transmitted through the cable.

For more general problem solving information, refer to the documentation supplied with your Switch.

For information about technical support, refer to *"Technical Support"* on *page 6*.

TECHNICAL SPECIFICATIONS

The SuperStack 3 Switch 4900 Series GBIC Module has been designed to the following standards:

Functional	ISO 8802-3, IEEE 802.3-1998, IEEE 802.3ab, IEEE 802.1D, IEEE 802.1Q
Safety	UL 1950, EN 60950, CSA 22.2#950-93, IEC 60950, IEC 825-1, EN60825-1
EMC	CISPRR 22 Class A, EN55022 Class A, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, AS/NZS 3548 Class A, CNS 13438 Class A
Immunity	EN 55024

Environmental

Operating Temperature	0–40℃ (32–104℉)
Storage Temperature	-10 to +70℃ (14–158℉)
Operating Humidity	10–95% (relative humidity, non-condensing)
Power Consumption	35 W (watts) maximum
Standards	EN60068 to 3Com schedule (Package testing: paras 2.1, 2.2, 2.30, and 2.32. Operational testing: paras 2.1, 2.2, 2.30 and 2.13).

REGULATORY NOTICES

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference to radio communications, in which case the user will be required to correct the interference at their own expense.

Information To The User

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient the receiving antenna.

— Relocate the equipment with respect to the receiver.

— Move the equipment away from the receiver.

— Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

In order to meet FCC emissions limits, this equipment must be used only with cables which comply with IEEE 802.3.

CSA Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

CE Statement (Europe)

This product complies with the European Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC as amended by European Directive 93/68/EEC.

You must only insert a 3Com approved GBIC transceiver into the Module. These are listed in the "Approved GBIC Transceivers" section of this User Guide.

VCCI Statement

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BSMI Statement

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

TECHNICAL SUPPORT

The following options are available for technical support:

- In the first instance contact your Network Supplier.

- Check the 3Com knowledgebase at
  http://knowledgebase.3com.com

- Browse the 3Com web site on **http://www.3com.com**

Please have your product model name, part number, hardware revision number and serial number along with all relevant details of the problem to hand before calling your Network Supplier or 3Com on the numbers below.

Country	Telephone Number	Country	Telephone Number	Country	Telephone Number
Asia, Pacific Rim				**Latin America**	
Australia	1 800 678 515	P.R. of China	10800 61 00137 or	Brazil	0800 13 3266
Hong Kong	800 933 486		021 6350 1590 or	Mexico	01 800 849CARE
India	+61 2 9937 5085 or		00800 0638 1590	Puerto Rico	800 666 5065
	000800 6501111	Singapore	800 6161 463	Central and South	AT&T +800 998 2112
Indonesia	001 800 61 009	S. Korea	00798 611 2230 or	America	
Japan	03 5783 1270		02 3455 6455		
Malaysia	1800 801 777	Taiwan, R.O.C.	0080 611 261		
New Zealand	0800 446 398	Thailand	001 800 611 2000		
Pakistan	+61 2 9937 5083				
Philippines	1235 61 266 2602				
Europe, Middle East and Africa					
From anywhere in these regions, call:	+44 (0) 1442 435529 phone +44 (0) 1442 436772 fax				
Europe and South Africa	From the following countries, you may use the following toll-free numbers:				
Austria	0800 297468	Ireland	1800 553117	Portugal	0800 831416
Belgium	0800 71429	Israel	1800 9453794	South Africa	0800 995014
Denmark	800 17309	Italy	800 8 79489	Spain	900 983125
Finland	0800 113153	Luxembourg	0800 3625	Sweden	020 795482
France	0800 917959	Netherlands	0800 0227788	Switzerland	0800 55 3072
Germany	0800 1821502	Norway	800 11376	U.K.	0800 966197
Hungary	06800 12813	Poland	00800 3111206		
North America	1 800 NET 3Com (1 800 638 3266) Enterprise Customers: 1 800 876 3266				

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ENVIRONMENTAL STATEMENTS

General Environmental Statement

It is the policy of 3Com Corporation to be environmentally-friendly in all operations. To uphold our policy, we are committed to:

- Establishing environmental performance standards that comply with national legislation and regulations

- Conserving energy, materials and natural resources in all operations

- Reducing the waste generated by all operations

- Ensuring that all waste conforms to recognized environmental standards

- Maximizing the recyclable and reusable content of all products

- Ensuring that all products can be recycled, reused and disposed of safely

- Ensuring that all products are labelled according to recognized environmental standards

- Improving our environmental record on a continual basis

End Of Life Statement

3Com processes allow for the recovery, reclamation and safe disposal of all end-of-life electronic components.

Regulated Materials Statement

3Com products do not contain any hazardous or ozone-depleting material.

Environmental Statement about the Documentation

The documentation for this product is printed on paper that comes from sustainable, managed forests; it is fully biodegradable and recyclable, and is completely chlorine-free. The varnish is environmentally-friendly, and the inks are vegetable-based with a low heavy-metal content.

Environmental Statement about the Product Packaging

The packaging for this product is fully recyclable. It has a recycled (post consumer) waste content of at least 40% by weight, and no heavy-metal content.

The SuperStack 3 Switch 4900 Series GBIC Module is part of the extensive SuperStack range of 3Com products. This range includes hubs, switches, power systems and other networking equipment, and is continually being developed. Contact your supplier for the latest product information and to order these products.

Product Registration

You can now register your GBIC Module on the 3Com web site:

`http://support.3com.com/registration/frontpg.pl`

Documentation Feedback

Your suggestions are very important to us. They will help make our documentation more useful to you. Please e-mail comments about this document to 3Com at:

`pddtechpubs_comments@3Com.com`

Please include the following information when commenting: the document title, part number (shown at the bottom of this page), and page number, if appropriate.